creased risk for introducing infectious organisms or dislodging valvular vegetations.

The clinical features are most often characterized by recurrent infections, with apparent adequate antibiotic therapy, until sudden severe cardiac decompensation occurs. Early identification of organisms is essential, but rarely does a well-documented sepsis precede the endocarditis. The appearance of a new cardiac murmur is of great therapeutic significance, but often it is not detected until late in the course of the infection, and frequently indicates impending cusp rupture. Congestive heart failure is associated with hemodynamically significant valvular regurgitation.

In contrast to findings in the adult population, an absolute as well as a relative increase in the number of children admitted to hospital with infective endocarditis is occurring. The most disturbing facts are that an antemortem diagnosis is rarely made, and there are few known survivors if infective endocarditis occurs before the age of 1 year. Therefore, early diagnosis and early adequate treatment of sepsis in young infants must be emphasized, along with continuing close observation for sufficient time to detect progression to endocarditis.

ELISA GRIEGO, MD
COLIN M. BLOOR, MD

REFERENCES

Arnett EN, Roberts WC: Active infective endocarditis: A clinicopathological analysis of 137 necropsy patients. Curr Probl Cardiol 1:8-76, Oct 1976

Johnson DH, Rosenthal A, Nadas AS: Bacterial endocarditis in children under two years of age. Am J Dis Child 129:183-186, Feb 1975

Rosenthal A, Nadas AS: Infective endocarditis in infancy and childhood, chap 4, *In* Rahimtoola SH (Ed): Infective Endocarditis. New York, Grune & Stratton, 1978, pp 149-178

Laboratory Investigation of Rape

THE PRESENCE OF SPERMATOZOA and elevated levels of acid phosphatase in the vagina are considered positive indicators of the presence of semen. Semen may also be identified by a semen-specific protein in cases of no sperm and low levels of acid phosphatase. The time of deposition of the ejaculate in the vagina is based not only upon sperm motility and their morphologic survival but also on quantitative levels of acid phosphatase. The latter is particularly useful in cases involving vasectomized men. Therefore, the minimum specimens for laboratory investigation of alleged sexual assault includes a microscopic examination for presence of sperm and motility as well as a quantitative acid phosphatase. Use of the Dacron swab technique allows for specimen collection from the vagina as well as the oral cavity, rectum, anal canal and body surface of an adult or a child.

Pubic hair combings as well as blood and saliva for ABO antigen secretor status when combined with the swab specimens have in selected cases been used for assailant identification or exclusion. Following a complete history, the proper and timely collection of pertinent specimens with adequate preservation and documented chain of possession is a *must* in cases of alleged sexual assault.

THEODORE P. FINDLEY, MD

REFERENCES

Findley TP: Quantitation of vaginal acid phosphatase and its relationship to time of coitus. Am J Clin Pathol 68:238-242, Aug 1977

Sensabaugh GF: Isolation and characterization of a semen-specific protein from human seminal plasma: A potential new marker for semen identification. J Forensic Sci Soc 23:106-115, Jan 1978

Sensabaugh GF: The quantitative acid phosphatase test—A statistical analysis of endogenous and postcoital acid phosphatase levels in the vagina. J Forensic Sci Soc 24:346-365, Apr 1979

Soules MR, Pollard AA, Brown KM, et al: The forensic laboratory evaluation of evidence in alleged rape. Am J Obstet Gynecol 130:142-147, Jan 15, 1978

Pneumoconiosis in Zoo Animals

SOME CASES of pneumoconiosis in humans suggest that atmospheric dust may play an etiologic role. To examine this possibility, animals have frequently been used as models of experimental pneumoconiosis. However, spontaneously occurring pneumoconiosis in animals is rarely reported. During the years 1956 through 1977, more than 11,000 autopsies were carried out on different species dying in the San Diego Zoo. A simple pneumoconiosis with lamellar birefringent crystals was observed in about 20 percent of the cases.

We studied 100 autopsies from 11 mammalian and 8 avian species. In mammals, mild pulmonary lesions comprised crystal-laden macrophages in alveoli and lymphatics. Interstitial fibrosis was present in 20 percent of cases. There were no nodules. In birds, dust retention produced large granulomas around tertiary bronchi without fibrosis. Mineralogic analysis using scanning and transmission electron microscopy showed most of the crystals to be silicates. About 90 percent were complex silicates with aluminum-potassium silicates comprising 70 percent of the analyzed particles. Electron and x-ray diffraction showed the silicates to be muscovite mica and its hydrothermal degradation product; that is, illite clay. This mica was also present on filtration membranes of atmospheric air samples obtained from the San Diego Zoo. The amount of dust retention